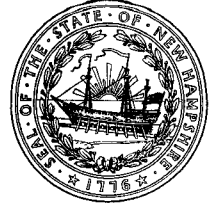




The State of New Hampshire
Department of Environmental Services



Michael P. Nolin
Commissioner

April 13, 2005
Letter of Deficiency
DSP#05-008

Mr. Don Drew
Mountain Lake Village District
RFD 2, Box 256-16
Woodsville, NH 03785

RE: Lower Mountain Lake Dam #112.12, Haverhill

Dear Mr. Drew:

The Department of Environmental Services, Dam Bureau (DES) consistently strives to enhance the safety of dams in New Hampshire through its dam safety program. One of the many instruments that play a part in reaching this goal is our inspection program. DES is forwarding this correspondence to you to advise you that in accordance with RSA 482:12 and Env-Wr 502.02, an inspection of the subject dam was conducted on September 24, 2004. During this visual inspection and/or file review, the following deficiencies were observed:

1. There were trees and brush located on both the upstream and downstream slopes of the dam. In addition, the area between the dam and access road is heavily overgrown with trees. These trees are prohibiting monitoring of seepage area located along the toe of the dam;
2. There is a wooden deck located on the top of the main spillway riser inlet structure. The deck is reducing the dam's discharge capacity;
3. There is soil erosion on the upstream slope of the dam located at the walkway to the riser structure;
4. There is an area of seepage located to the left of the 24 inch low level outlet. The limits of the seep could not be accurately defined due to heavy tree and brush growth;
5. The downstream end of the 24 inch low level outlet pipe was overgrown with trees. IN addition there was orange bacteria and seepage observed to the left of the outlet pipe. The pipe was also partially submerged preventing accurate observation of seepage (if any) exiting the pipe. The tail water condition is due to the gravel access road culvert invert being installed too high;
6. There was tree, brush and tall grass growth in the emergency spillway. In addition, the downstream end of the emergency spillway was wooded;
7. At the time of the inspection the condition and location of the low level outlet was unknown. According to the design plans there is a 24 inch shear gate attached to an 18 inch steel bar cage. The design called for using a grapppling hook to attach to the bar cage/shear gate to pull it free. The 1979 Army Corps of Engineers (ACOE) Phase I Report recommended replacing the shear gate with a gate valve and service bridge for easy access.

In addition, the ACOE report documented hearing water dripping into the 24 inch pipe, this is an indication that the pipe joint has opened up, there is general pipe deterioration, or the gate is leaking. This dripping water could also be carrying embankment material into the pipe causing the embankment settlement as described below;

8. There is a low area on the embankment crest located approximately above the 24 inch low level outlet pipe;
9. The operations and maintenance plan (O&M) has not been updated since it was submitted in 1997; and
10. The Emergency Action Plan (EAP) has not been updated or tested since 2001.

DES believes that the above deficiencies can be corrected by performing the following items by the indicated schedule:

Immediately:

1. Remove the wooden deck from the top of the riser structure;

September 1, 2005:

2. Remove all trees and brush from the upstream slope, downstream slope, emergency spillway, and area located between the dam and gravel access road located just beyond the toe of the dam;
3. Repair the soil erosion located at the beginning of the walkway to the riser structure;
4. Once the trees are removed in item one, document the limits of the seepage located along the entire length of the dam.
5. At the direction of a licensed professional engineer, conduct a camera inspection of the 24 inch low level outlet pipe, locate the low level gate, and inspect the main spillway pipe and riser. An inspection report must be submitted to DES and include a schedule for replacing the shear gate with a gate valve. Please be advised that the life span of corrugated metal pipe is approximately 30 years. This dam was built in 1967 making these pipes approximately 37 years old;
6. Survey the dam crest and report to DES the degree of settlement above the 24 inch low level pipe. This settlement should be closely monitored as it may be associated with the seepage observed along the toe of the dam in the same location;
7. Review and update the O&M plan. An item must be added to address the operation of the 24 inch low level outlet. It is imperative that the dam operator is familiar with the location and operation of the low level outlet in the event of an emergency; and
8. Review and update the EAP. Update the flowchart, indicating the DES emergency contact number is cell 419-9206, pager 639-6982. Update the names and numbers of the dam monitors on the flowchart if necessary. Grafton County Sheriff's Office has a copy of the EAP, add this agency in Appendix F, as a holder of the plan. Mail copies of the updated flowchart to all holders of the EAP. If you have further questions relative to updating and testing your EAP you can contact Bethann McCarthy, P.E., our EAP Coordinator at 271-3406.

Letter of Deficiency
Dam #112.12/DSP#05-008
April 13, 2005
pg. 3

DES is requesting that you complete and submit the attached "Intent to Complete Repairs" form, within 30 days of receipt of this letter, that will provide for correction of the identified deficiencies by the date(s) indicated above. Please call or write to our office if the repairs are completed ahead of the aforementioned schedule so that DES may schedule a follow-up inspection. Unless notified otherwise, DES will conduct the follow-up inspection on or after the date(s) indicated above. If you believe changes to the items of work or dates are necessary, please make the changes directly on the form and provide a brief explanation. We have enclosed a self addressed stamped envelope for you to return this form.

Our intent in sending you this correspondence is to make you aware of items that DES believes warrant your attention to insure the continued safe operation of your dam. It is our hope that, through the submittal of the attached form and a commitment to keeping a well-maintained dam, you will voluntarily comply with the requested items of work. If we do not receive the intent form or a similarly adequate written reply, we will assume that you are in agreement with our findings and recommendations and DES will carry out follow-up inspections accordingly.

If you have any questions or comments regarding this Letter of Deficiency or would like to be present at future inspections, please contact me at 271-3406, or write to the Water Division at the address listed on the bottom of the cover page.

Sincerely,



Jeffrey M. Blaney, P.E.
Dam Safety Engineer

Attachments Copy of 1997 O&M on file, Fact Sheet DB8, DB13
cc: Gretchen R. Hamel, Legal Unit Administrator✓
Bethann McCarthy, P.E., EAP Coordinator
Town of Haverhill
Certified # Hand Delivered - 4/18/05
JMB/was/h:/safety/wendy/lod/112-12lod.doc